

UNCLASSIFIED

AD-A259 314



## DOCUMENTATION PAGE

 Form Approved  
 OMB No 0704-0188  
 Exp Date Jun 30, 1986

UNCLASSIFIED			1b RESTRICTIVE MARKINGS	
2a SECURITY CLASSIFICATION AUTHORITY			3 DISTRIBUTION STATEMENT <b>Approved for public release;          Distribution Unlimited</b>	
2b DECLASSIFICATION/DOWNGRADING SCHEDULE				
4 PERFORMING ORGANIZATION REPORT NUMBER(S)  DODPOPTR/AYD 91-019			5 MONITORING ORGANIZATION REPORT NUMBER(S)	
6a NAME OF PERFORMING ORGANIZATION  PACKAGING DIVISION		6b OFFICE SYMBOL (If applicable) SMCAR-AEP	7a NAME OF MONITORING ORGANIZATION	
6c ADDRESS (City, State, and ZIP Code) U.S. ARMY ARDEC PICATINNY ARSENAL, NJ 07806-5000			7b ADDRESS (City, State, and ZIP Code)	
8a NAME OF FUNDING/SPONSORING ORGANIZATION		8b OFFICE SYMBOL (If applicable)	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER	
8c ADDRESS (City, State, and ZIP Code)			10. SOURCE OF FUNDING NUMBERS	
			PROGRAM ELEMENT NO.	PROJECT NO.
			TASK NO.	WORK UNIT ACCESSION NO.
11. TITLE (Include Security Classification) Performance Oriented Package Testing of the M205, M218, M219, & M220 Propelling Charges				
12 PERSONAL AUTHOR(S) James Newcombe				
13a. TYPE OF REPORT Final		13b TIME COVERED FROM _____ TO _____	14 DATE OF REPORT (Year, Month, Day)	
15 PAGE COUNT				
16 SUPPLEMENTARY NOTATION				
17 COSATI CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)	
FIELD	GROUP	SUB-GROUP	Performance Oriented Package Testing of Charges, Propelling: M205, M218, M219, M220 packed IAW DWG 9313721	
19 ABSTRACT (Continue on reverse if necessary and identify by block number)				
<p>This report contains the testing and test results of Performance Oriented Package Testing on Charges, Propelling: M205, M218, M219, M220 packed in accordance with ARDEC DWG. 9313721 (672 per fiberboard box).</p>				
20 DISTRIBUTION/AVAILABILITY OF ABSTRACT <input checked="" type="checkbox"/> UNCLASSIFIED/UNLIMITED <input type="checkbox"/> SAME AS RPT <input type="checkbox"/> DTIC USERS			21 ABSTRACT SECURITY CLASSIFICATION	
22a NAME OF RESPONSIBLE INDIVIDUAL James Newcombe			22b TELEPHONE (Include Area Code) (201) 724-2772	22c OFFICE SYMBOL SMCAR-AEP

 DTIC  
 ELECTE  
 JAN 06 1993  
 S E D

I. Report Number: DOD POP HM TR/AYD 92-026

II. Title: Performance Oriented Packaging Testing for M205,  
M218, M219, M220 Propelling Charges.  
Packed 672 per fiberboard box in accordance with  
ARDEC DWG. 9313721.

Author: James Newcombe

Performing Activity: ARDEC

Address: Department of the Army  
Commander, U.S. Army ARDEC  
Picatinny Arsenal, NJ 07806-5000  
Attn: SMCAR-AEP (Bldg. 455)

Date: December 1992

Approved for public release; distribution is unlimited.

Accession For	
NTIS CRA&I	<input checked="checked" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification _____	
By _____	
Distribution /	
Availability Codes	
Dist	Avail and/or Special
A-1	

92-32551



92 12 22 129

1. Data:

Container:

Type: Box, Fiberboard  
UN Code: 4G  
Specification Number: PPP-B-636  
Material: Fiberboard  
Capacity: 154.5 liters  
Dimensions: 70cm x 55.4cm x 39.84cm  
(27 9/16" x 21 13/16" x 15 11/16")

Product:

Name: M205  
Part Number: 9280588  
United Nations Number: UN 0161  
United Nations Packaging Group: II  
United Nations Nomenclature: POWDER, SMOKELESS  
Physical State: Solid  
Amount per Container: 672 Propelling Charges  
NSN: 1315-01-050-8882

Name: M218  
Part Number: 9300234  
United Nations Number: UN 0242  
United Nations Packaging Group: II  
United Nations Nomenclature: CHARGES, PROPELLING FOR  
CANNON  
Physical State: Solid  
Amount per Container: 672 Propelling Charges  
NSN: 1315-01-290-1598

Name: M219  
Part Number: 9378134  
United Nations Number: UN 0242  
United Nations Packaging Group: II  
United Nations Nomenclature: CHARGES, PROPELLING FOR  
CANNON  
Physical State: Solid  
Amount per Container: 672 Propelling Charges  
NSN: 1315-01-290-1597

Name: M220  
Part Number: 9381510  
United Nations Number: UN 0242  
United Nations Packaging Group: II  
United Nations Nomenclature: CHARGES, PROPELLING FOR  
CANNON  
Physical State: Solid  
Amount per Container: 672 Propelling Charges  
NSN: 1315-01-329-2575

## 2. Background:

This report contains the testing and test results performed on propelling charges packed in a fiberboard box manufactured in accordance with PPP-B-636, Style CSSC, Type CF, Class water-resistant, Grade V3C. 672 Propelling charge containers were utilized to simulate the proper content weights. The weight of the single packed out box was 88 lbs. The method of packing was consistent with ARDEC DWG. 9313721.

## 3. Testing

Note: All testing was performed in accordance with referenced sections of CFR 49, except that one complete pack was used in lieu of multiple packs for each test due to the limited supply of propelling charges at the time of testing.

### a. Drop Test (178.603)

#### Procedure:

One container was dropped in the following orientations: flat on bottom, flat on top, flat on long-side, flat on short-side, and the top-right-rear corner. The height for all five drops was 1.2 meters.

#### Results:

There was no visible damage on the first four drops. The final corner drop produced a slight tear on the edge of the outer box, however, the contents did not spill and the container was easily capable of being handled without danger of spillage. The container configuration satisfied the passing criteria of CFR 49 for the 1.2 meter Drop test.

### b. Vibration Test (178.608)

#### Procedure:

One container was allowed to vibrate unrestrained for a period of one hour on a "loose cargo" machine with a peak to peak displacement of one inch and a frequency of 210 cycles/minute. This frequency and displacement were sufficient enough to allow a 1/16" thick piece of metal strapping to slide underneath the box.

#### Results:

Besides some minor abrasions to the bottom and sides of the box, there was no notable damage as a result of the vibration. The container configuration satisfied the passing criteria of CFR 49 for the Vibration test.

c. Stack Test (178.606)

Procedure:

A dead load of 704 lbs. was applied to the top of the packed out fiberboard box for a period of 24 hours. This load represents the weight imposed on the bottom container for a stacking height of 10 feet.

Results:

Although there was a uniform compression of approximately 1/16" on the container, it still adequately supported the imposed load. The container configuration satisfied the passing criteria of CFR 49 for the Stack test.

5. References:

a. Federal Register, "49 CFR Part 107, 1991"

6. Based on the above test results, the criteria for Performance Oriented Packaging for this item as specified in CFR 49 have been either met or exceeded. The following POP symbol shall be applied to containers that are packed IAW ARDEC DWG. 9313721.



4G/Y40/S/\*\*  
USA/DOD/AYD

\*\* Insert last two digits of year in which  
container is packed out